

AMENDMENTS TO THE CLAIMS

1. (Currently amended): An animal behavior analysis system, said system comprising:
an enclosure, said enclosure comprising:
an animal position indicator comprising a two-dimensional force plate;
a food consumption indicator comprising a photobeam and an overflow;
and
a fluid consumption indicator comprising a capacitance indicator;
wherein said system reports behavioral data at a temporal resolution of 20
seconds or lower.
2. (Original): The system of claim 1, wherein said system reports behavioral data with a temporal
resolution of 1 second or lower.
3. (Original): The system of claim 1, wherein said system reports behavioral data with a temporal
resolution of 50 ms or lower.
4. (Original): The system of claim 1, wherein said enclosure is a mouse cage.
5. (Original): The system of claim 1, wherein said system reports behavioral data with a temporal
resolution sufficient to permit automated bout detection of a mouse.
- 6-7 (Canceled).
8. (Currently amended): The system of claim ~~7~~ 1, wherein said force plate comprises high and
low frequency transducers.
- 9-14 (Canceled).
15. (Currently amended): The system of claim ~~14~~ 1, wherein said food consumption indicator
comprises an overflow to prevent piled up food from producing a false positive signal.
- 16-18. (Canceled).

19. (Currently amended): The system of claim ~~18~~ 1, wherein said capacitance detector operates in a radio frequency range.

20. (Canceled)

21. (Currently amended): The system of claim ~~20~~ 1, further comprising a data acquisition system.

22. (Original): The system of claim 20, wherein said data acquisition system produces an event file.

23. (Original): The system of claim 22, wherein the event file produced by said system provides event information at sufficient resolution to distinguish behavioral bouts of mice using a mathematical method.

24. (Original): The system of claim 23, wherein said mathematical method comprises a frequency analysis.

25. (Original): A method of characterizing the behavior of an animal, said method comprising:
providing an animal in an animal behavior analysis system of claim 1; and
collecting data produced by said system wherein data provided by said system comprises event information regarding spatial position of the animal in the enclosure, event information regarding food consumption, and event information regarding fluid consumption.

26. (Original): The method of claim 25, wherein said animal is a mouse.

27. (Original): The method of claim 25, wherein said method further comprises analyzing said data to provide a behavioral fingerprint of said animal.

28. (Original): The method of claim 27, wherein said analyzing comprises automated detection of one or more behavioral bouts.

29. (Original): The method of claim 27, wherein said behavioral fingerprint is characteristic for a particular genetic strain of said animal.

30. (Original): The method of claim 25, wherein said data is provided in an event file.

31. (Original): The method of claim 25, further comprising taking a moving average of said event data.

32. (Original): The method of claim 25, further comprising performing a frequency analysis of said event data.

33. (Original): The method of claim 27, further comprising entering said fingerprint into a database of behavioral fingerprints.

34-77. (Canceled).

78. (Currently amended): A method of screening an agent for an effect on animal behavior, said method comprising:

contacting a test animal with said agent;

placing said animal in an animal behavior analysis system of claim 1 to generate a behavioral fingerprint;

and comparing said ~~finger-print~~ fingerprint to a negative control fingerprint where a deviation of said fingerprint from said negative fingerprint control indicates that said agent alters said animal's behavior.

79. (Original): The method of claim 78, wherein said agent is a substance of abuse.

80. (Original): The method of claim 78, wherein said agent is a pharmaceutical.

81. (Original): The method of claim 78, wherein said animal is a mouse.

82. (Currently amended): The method of claim 78, wherein said animal is a mutant mouse-.